

**BILLING CODE 5001-10-P**

**DEPARTMENT OF DEFENSE**

**Department of the Air Force**

**2017 Public Interface Control Working Group and Forum for the NAVSTAR GPS Public Documents**

**AGENCY:** Department of the Air Force, Global Positioning System Directorate (GPSD).

**ACTION:** The Global Positioning System Testing notice.

**SUMMARY:** This notice informs the public that the Space and Missiles Center Global Positioning Systems (GPS) Directorate Engineering (SMC/GPE) Systems Integration Demonstration (SI Demo) team plans to execute a test in February 2019 to investigate legacy receiver week roll-over behavior and analyze any off-nominal behavior exhibited. Additional details about the test and how interested civil vendors may participate is detailed below.

**DATES:** Questionnaire due by February 4, 2019.

**ADDRESSES:** SMC/GPE, 483 North Aviation Boulevard, El Segundo, CA 90245-2808.

**SUPPLEMENTARY INFORMATION:** The Global Positioning System (GPS) week number rollover occurs in the GPS legacy navigation (LNAV) message every 1024 weeks due to the GPS week number being represented by only 10 bits within the LNAV message. The next GPS week number roll over will occur 18 seconds prior to the 0000Z boundary (Coordinated Universal Time) between April 6/7 2019. In most cases, any negative response from a GPS receiver caused by a problem accounting for the 10-bit week number week roll over would likely affect the calendar conversion from GPS time to UTC date/time and could result in the GPS receiver thinking it had jumped backward in time by 1024 weeks to 21/22 August 1999. Many receiver-specific design documents contain requirements that ensure proper handling of a

rollover event. However, SMC/GPE does not control, maintain, or even have an awareness of the software and requirements baseline of every GPS receiver in operation. Many performance conditions, especially those in older GPS receivers, may differ from expectations laid out in modernized receiver-specific design documents. It should be noted that the modernized civil navigation (CNAV) signals all utilize a 13-bit week number representation and the use of those CNAV signals can delay potential week number roll-over problems to 5/6 January 2137. Below are a few questions whose answers would help SMC/GPE understand your receiver's expected behavior during the upcoming GPS 10-bit week number roll-over:

1. Does your strategy involve user input?
2. Do the users understand and know the procedure?
3. Is the procedure detailed in a manual or other document?
4. Is the procedure, manual, or documentation posted on your website?
5. Are there concerns for any automated systems your receiver is integrated into?
6. Do you plan on posting product advisories for each receiver type? If so, where?
7. Has testing been planned/completed to confirm receiver performance expectations?
8. Would you be interested in participating in the test by either: 1) Supplying receivers & technical support to test with the government team? 2) Testing using your own test setup and configuration?
9. How many receiver types would you be able to supply/test for this effort? (Note, not all receiver types may be applicable to this test event.)

If you wish to participate in this test, please submit the answers to the questions above to SMC/GPE mailbox at [smc.gpev.sidemo28@us.af.mil](mailto:smc.gpev.sidemo28@us.af.mil) by February 4, 2019. After the submission

of the questionnaire, the SI Demo team will schedule individual meetings with interested civil vendors to further discuss their participation in the test in more detail.

**FOR FURTHER INFORMATION CONTACT:** 2Lt Marcy Gouri (marcy.gouri@us.af.mil)  
or Capt Aaron Knoblauch (aaron.knoblauch@us.af.mil)

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